Leiditech

3LM33CA

Low Vc Transient Voltage Suppressor

DESCRIPTION:

TVS diodes can be used in a wide range of applications which like consumer electronic products, automotive industries, munitions, telecommunications, aerospace industries, and intelligent control systems.

SMC

Symbol

Bi-directional

FEATURES:

- ✧ Glass passivated or planar junction.
- ✧ Excellent clamping capability.
- ✧ Repetition rate (duty cycle): 0.01%.
- ✧ Typical I_R less than 1μA above 10V.
- ✧ Low profile package and low inductance.
- ✧ 3000W peak pulse power capability at 10×1000μs waveform.
- ✧ Fast response time: typically less than 1.0ps from 0V to V_{BR} min.
- ✧ High temperature soldering: 260℃/10s at terminals.
- ✧ Plastic package has Underwriters Laboratory Flammability 94V-0.
- ✧ For surface mounted applications in order to optimize board space.

ABSOLUTE MAXIMUM RATINGS (T_A=25℃, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T_{stg}	-55 to +150	℃
Operating junction temperature range	T_j	-55 to +125	℃
Steady state power dissipation at T_L=75℃	$P_{M(AV)}$	8.0	W
Peak pulse power dissipation on 10/1000μs waveform	P_{PP}	3000	W
Maximum instantaneous forward voltage at 80A for unidirectional	V_F	5.0	V

ELECTRICAL CHARACTERISTICS (T =25℃)

PART NUMBER	REVERSE STAND -OFF VOLTAGE	BREAKDOWN VOLTAGE VBR(V)MAX.@I T		TEST CURRENT	REVERSE LEAKAGE @VRWM	PEAK PULSE CURRENT	MAXIMUM CLAMPING VOLTAGE @Ipp
BI-POLAR	VRWM (V)	VBR MIN(V)	VBR MAX(V)	IT (mA)	IR (μA)	Ipp (A)	Vc (v)
3LM33CA	33.0	36.70	40.60	1	1	101.8	38

① Surge waveform: 10/1000μs

V_R: Stand-off voltage -- Maximum voltage that can be applied

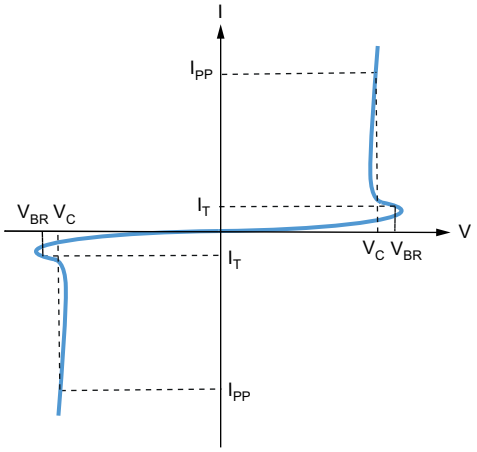
V_{BR}: Breakdown voltage

V_C: Clamping voltage -- Peak voltage measured across the suppressor at a specified I_{PP}

I_R: Reverse leakage current

RATINGS AND V-I CHARACTERISTICS CURVES (T_A=25℃, unless otherwise noted)

FIG.1:V- I curve characteristics



V_{BR}.....Breakdown voltage

I_T.....Reverse test current

V_C.....Clamping voltage

I_{PP}.....Peak pulse surge current

FIG.2 Pulse waveform

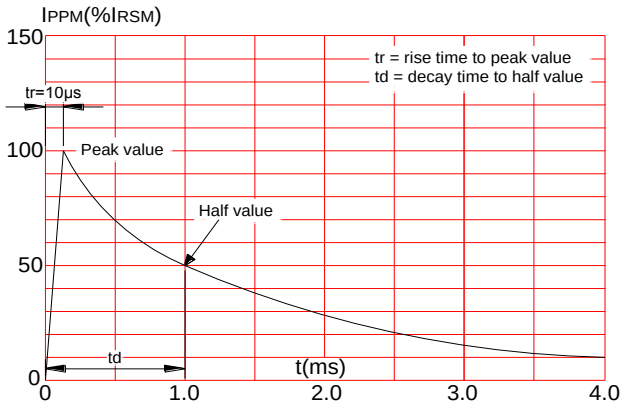
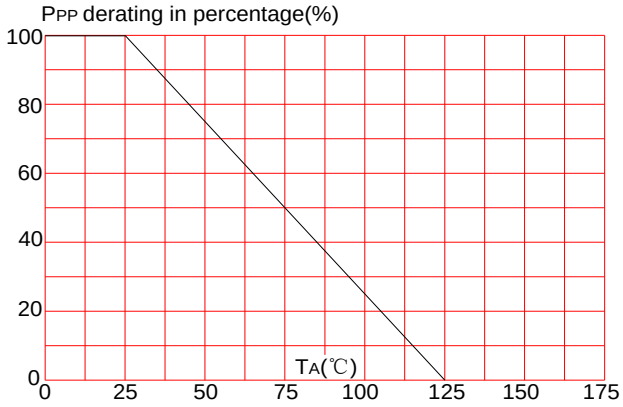


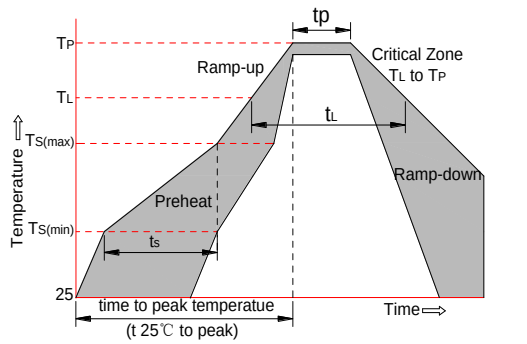
FIG.3: Pulse derating curve



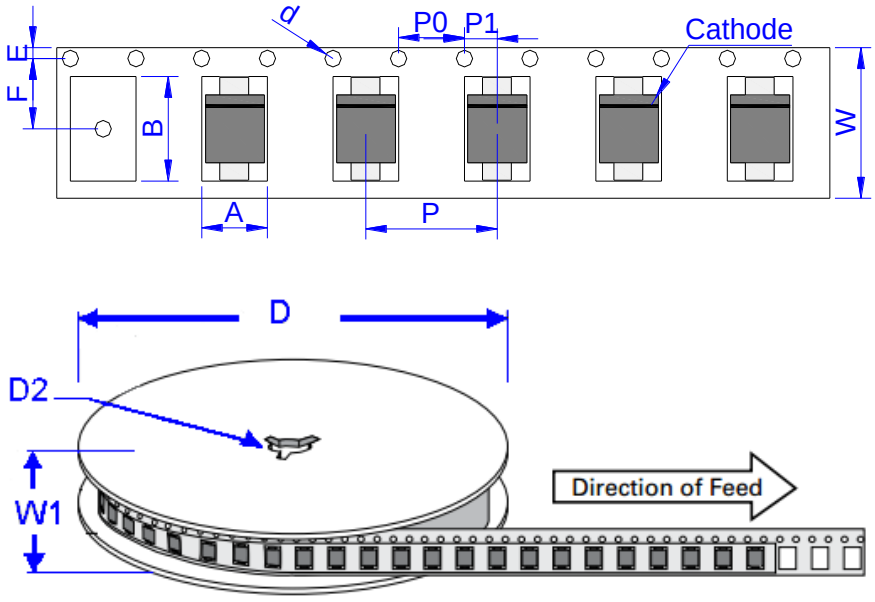
SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see FIG.5)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L)to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

FIG.5: Reflow condition

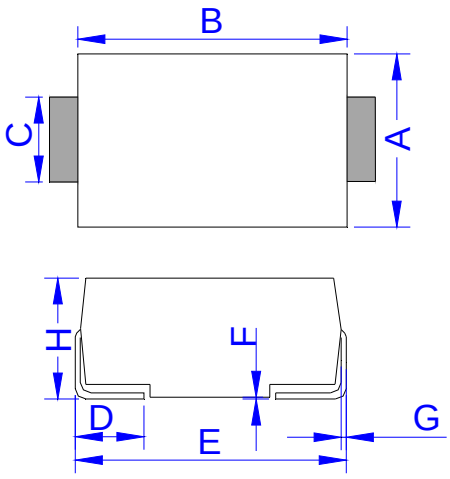


TAPE AND REEL SPECIFICATION-SMC

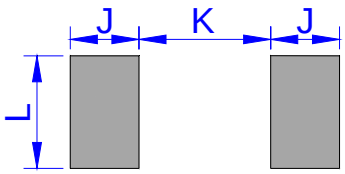


Ref.	Dimensions	
	Millimeters	Inches
A	6.05 ± 0.3	0.238 ± 0.012
B	8.31 ± 0.3	0.327 ± 0.012
d	1.55 ± 0.1	0.061 ± 0.004
D	330.0	13.0
D2	13.3 ± 0.3	0.524 ± 0.012
E	1.75 ± 0.2	0.069 ± 0.008
F	7.50 ± 0.2	0.295 ± 0.008
P	8.00 ± 0.2	0.3145 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	2.00 ± 0.2	0.079 ± 0.008
W	16.0 ± 0.2	0.630 ± 0.008
W1	19.7 ± 2.0	0.776 ± 0.079

PACKAGE MECHANICAL DATA



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	5.59	6.22	0.220	0.245
B	6.60	7.11	0.260	0.280
C	2.85	3.27	0.112	0.129
D	0.76	1.52	0.030	0.060
E	7.75	8.13	0.305	0.320
F	0.00	0.20	0.000	0.008
G	0.15	0.31	0.006	0.012
H	1.99	2.61	0.078	0.103



DO-214AB (SMC)

Ref.	Dimensions	
	Millimeters	Inches
	Typ.	Typ.
J	3.03	0.119
K	3.84	0.151
L	3.82	0.150

PART No.	PACKAGE	QUANTITY	TAPE & REEL
3LM33CA	SMC(DO-214AB)	3,000	13 inch

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